

**Via E Filed**

PATENT APPLICATION  
Docket No: 15689.92

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of		)	
	Yukihiko Okumura	)	
Serial No.:	09/998,601	)	Art Unit
		)	2668
Filed:	November 16, 2001	)	
		)	
Confirmation No.:	6209	)	
		)	
For:	DATA TRANSMISSION METHOD, DATA TRANSMISSION SYSTEM, TRANSMITTER AND RECEIVER	)	
		)	
Examiner:	Warner Wong	)	
		)	
Customer No.:	022913	)	

**AMENDMENT "D"**

Via E Filed - **AMENDMENT**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office action of March 8, 2006 (paper no. 20060223), please amend the above-identified application as follows:

**Remarks/Arguments** begin on page 2 of this paper.

An **Appendix** including Exhibits A, B and C are attached following page 5 of this paper.

## **REMARKS**

These remarks and the accompanying amendments are responsive to the Office Action made final and dated March 8, 2005 (hereinafter referred to as the "Office Action"). At the time of the last examination, Claims 1, 3-5, 7-11 and 14 were pending. The Office Action rejected each of independent Claims 1, 11 and 14 as well as dependent Claims 4 and 5 (which depend from Claim 1) under 35 U.S.C. 103(a) as being unpatentable over United States patent number 5,896,374 issued to Okumura, et al. (the patent hereinafter referred to as "Okumura") in view of United States patent number 6,292,484 issued to Oliver (the patent hereinafter referred to as "Oliver"). Claim 8, which is in independent form, has been allowed. Claims 3, 7, 9 and 10 are indicated to be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims. There are no claim amendments made herein since the applicants respectfully traverse the 35 U.S.C. 103(a) rejection of Claims 1, 4, 5, 11 and 14 specified in section 1 of the Office Action.

Regarding the rejected independent Claims 1, 11 and 14, each of these claims recite that at the transmitting side, "a length of the transmission data [is] one of two values, X ( $X \neq 0$ ) and 0". Each of the independent claims recites that the frame data contains "transmission data and ... error-detecting code of the transmission data if the frame contains the transmission data" and "contain[s] neither the transmission data nor the error-detecting code of the transmission data if the frame does not contain the transmission data." For instance, CRC is not transmitted when the length of the transmission data is 0, while CRC is transmitted when the length is X where  $X \neq 0$ .

At the receiving side, the independent claims recites the determining or means for determining that "the transmission data and the error-detecting code of the transmission data by determining a predetermined position in the received frame data as the final bit position of the

frame data, and calculating an error-detecting code based on the determined transmission data;" and includes the deciding or the means for deciding "that the frame contains the transmission data if the determined error-detecting code matches the error-detecting code calculated based on the determined transmission data, and deciding that the frame data does not contain the transmission data or the received frame data contains an error if the determined error-detecting code does not match the calculated error-detecting code". For example, CRC detection may be conducted only at the position where the length is X, and if the CRCs match, it is decided that frame contains the transmission data, while if the CRCs do not match, it is decided that frame does not contain the transmission data or the received frame data contains an error.

Re: transmitting side

The Office Action asserts that there is motivation to combine Okumura and Oliver. However, as shown in Exhibit A, in Oliver (i.e., U.S. Pat No. (USP) 6,292,484), rate information is transmitted. That is, Oliver does not relate to blind rate detection, in contrast to the recitation of the independent claims and contrary to the teachings of Okumura. Thus, the applicants respectfully disagree with the Office Action assertion that there is motivation to combine Okumura and Oliver.

Further, even if Okumura and Oliver are combined, it does not lead to a feature of the present invention where the length of the transmission data is one of (only) two values, 0 and X, and CRC is not transmitted when the length is 0, while CRC is transmitted when the length is X. Therefore, combination of the references is not appropriate, and even if combined, the combination does not result in a combination that includes all of the recited features of any of the

rejected independent claims. Therefore, Claims 1 and 11 are not unpatentable in view of Okumura and Oliver, either singly or in combination.

Re: receiving side

Only Okumura discloses blind rate transmission. As shown in Exhibit B, in Okumura, if one would like to assume only one bit position, rate information has to be transmitted for each frame. But if the rate information is transmitted, there is a disadvantage in that the transmission efficiency drops. Furthermore, Okumura does not disclose the assumption of only one bit position without transmitting/receiving rate information for each frame.

In contrast, the rejected independent claims assume only one bit position (where the length of the transmission data is X) without receiving rate information for each frame, since the length of the transmission data is either X or 0. Therefore, the transmission efficiency is high. Therefore, for this reason, none of the rejected independent claims 1, 11 and 14 are unpatentable over Okumura and Oliver, either singly or in combination.

Further, as shown in Exhibit C, in Okumura and Oliver, there are a plurality of lengths which are not zero (rate 2 and rate 1 in the Exhibit C) for data to be transmitted. If Okumura and Oliver are combined, rate detection is conducted by conducting CRC detection at a plurality of final bit position candidates. In this way, if there are a plurality of final bit position candidates, there is the disadvantage that the possibility of incorrect detection becomes high. This is because when a final bit position (e.g. rate 1) which is shorter than actual final bit position (e.g. rate 2) is assumed, since there is received data portion at a place where CRC is assumed, there is the possibility that the received data portion accidentally matches with CRC pattern, and it is incorrectly decided that assumed final bit position is the true final bit position.

In contrast, examples of the recitations of the rejected independent claims would conduct CRC detection only at the position where the length is X, and if CRCs match, it is decided that frame contains the transmission data, while if CRCs do not match, it is decided that frame does not contain the transmission data or the received frame data contains an error. Therefore, there is no possibility that another rate is incorrectly detected. Thus, also from this point of view, none of the rejected independent Claims 1, 11 and 14 are unpatentable over Okumura and Oliver, either singly or in combination.

Claims 4 and 5 depend from Claim 1 and thus are patentable over the cited art for at least the reasons provided for Claim 1. Therefore, withdrawal of the 35 U.S.C. 103(a) rejection is appropriate and is respectfully requested. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 4<sup>th</sup> day of May, 2006.

Respectfully submitted,

WORKMAN NYDEGGER



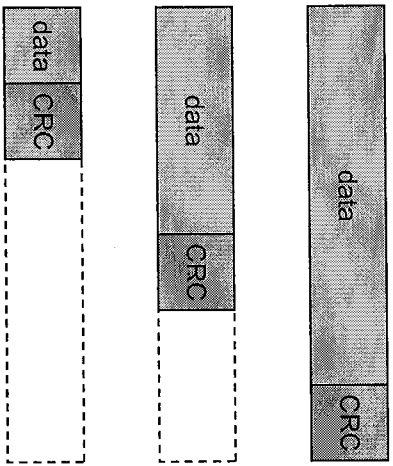
ADRIAN J. LEE  
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Customer No. 022913

AJL:ahy  
AHY0000000105V001

# APPENDIX

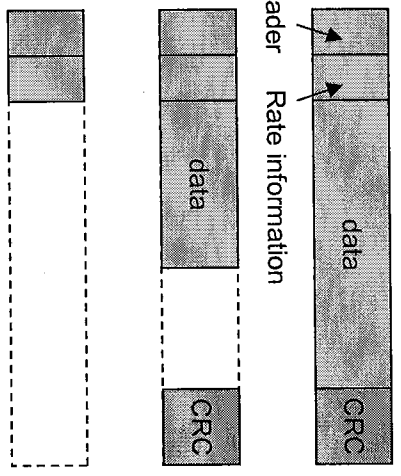
# **EXHIBIT A**

USP 5896374 (Okumura)



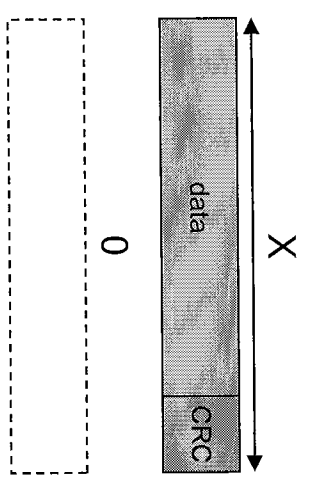
- There is no disclosure regarding 1) a frame with 0 bit length and 2) that CRC is not transmitted when there is no transmission data

USP 6292484 (Oliver)



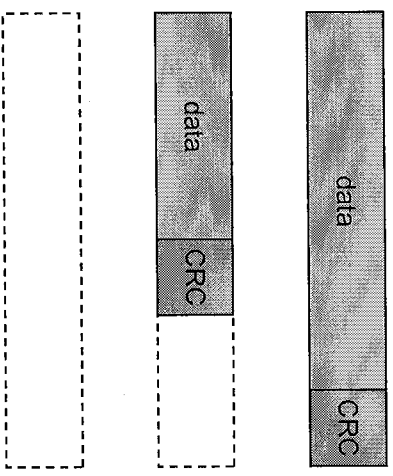
- It is effective for minimizing overhead. ← The Examiner said that this is motivation for combining USP 5896374 and USP 6292484.

Present invention



- Length of transmission data is one of (only) two values, 0 and X.

Difference between present invention and references  
- In USP 6292484, rate information is transmitted. That is, contrary to the present invention and USP 5896374, USP 6292484 does not relate to blind rate detection. Thus, the Examiner's comment that there is motivation to combine USP 5896374 and USP 6292484 is not reasonable.  
- Further, even if they are combined, it only results in the following transmission method. Thus, it does not lead to a feature of the present invention where the length of the transmission data is one of (only) two values, 0 and X, and CRC is not transmitted when it is 0, while CRC is transmitted when it is X.

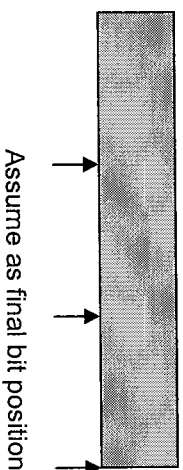




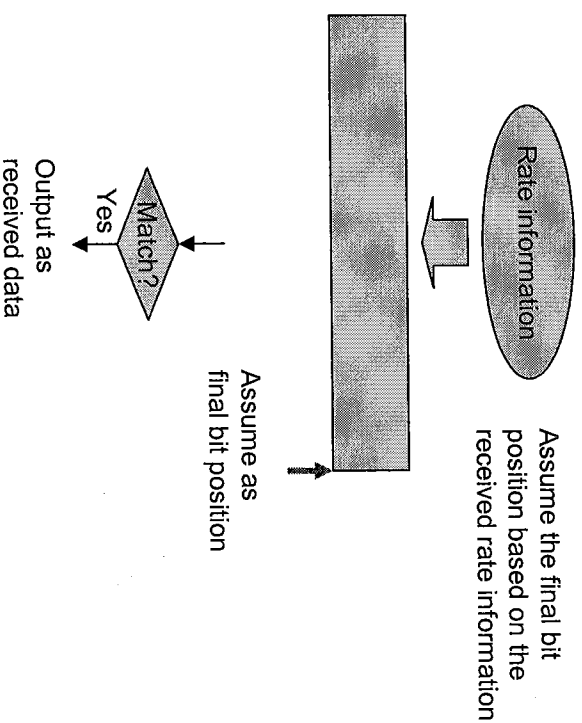
# **EXHIBIT B**

USP 5896374

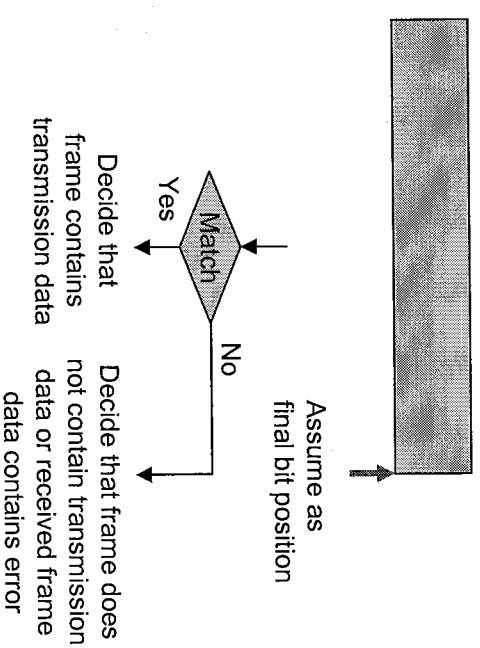
- Embodiment 1



- Embodiment 2



Present invention



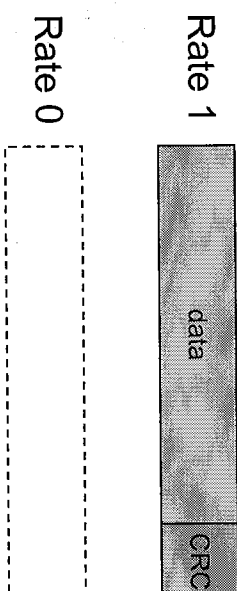
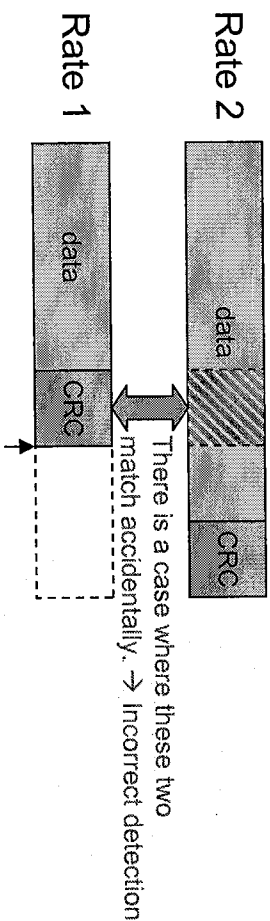
- Column 5, lines 26-37 to which the Examiner referred is a case in which rate information is transmitted for each frame
- If one would like to assume only one bit position, rate information has to be transmitted. But if the rate information is transmitted, the transmission efficiency drops.
- USP 5896374 does not disclose assuming only one bit position without transmitting/receiving rate information for each frame.

- The present invention can assume only one bit position (where the length of the transmission data is X) without receiving rate information for each frame, since the length of the transmission data is either X or 0.
- The transmission efficiency is high.

# EXHIBIT C

If USPs 5896374 and 6292484 are combined ...

Present invention



Rate 0

There is possibility that CRCs accidentally match, and it is incorrectly decided that the rate is rate 1 (where the true rate is rate 2).

There is no possibility that it is incorrectly decided that the rate is rate 0 (where the true rate is rate 1).

[Detection result]

[Detection result]

- CRCs match at rate 1 → rate 1
- CRCs match at rate 2 → rate 2
- CRCs match neither at rate 1 nor rate 2 → rate 0 or there is error

- CRCs match at rate 1 → rate 1
- Other than that → rate 0 or there is error

[Disadvantage]

[Advantage]

- There is possibility that another rate is incorrectly detected.

- There is no possibility that another rate is incorrectly detected.

[Advantage]

- The transmission efficiency is high, since rate information is not transmitted and when the rate is rate 0, CRC is not transmitted.

- The transmission efficiency is high, since rate information is not transmitted and when the rate is rate 0, CRC is not transmitted.